



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,421	08/13/2001	Masaki Aoki	NAKI- BP72	9006

7590 10/03/2003
Joseph W Price
Price and Gess
2100 SE Main St Suite 250
Irvine, CA 92614

EXAMINER

ZIMMERMAN, GLENN

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,421

Applicant(s)

AOKI ET AL.

Examiner

Glenn Zimmerman

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on June 20, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 38-92 is/are pending in the application.
- 4a) Of the above claim(s) 1-18, 20, 22-42, 45, 56-76 and 78-81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 21, 43, 44, 46-54, 77, 82-88, 91 and 92 is/are rejected.
- 7) ☒ Claim(s) 55, 89 and 90 is/are objected to.
- 8) ☒ Claim(s) 1-92 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

Amendment, filed on June 20, 2003, has been entered and acknowledged by the examiner.

Election/Restrictions

Applicant's election of Group III in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 19, 21, 43, 46-51 and 82-88 are rejected under 35 U.S.C. 102(a) as being anticipated by Izumo Japanese Patent Publication 11246238.

Regarding claim 19, Izumo discloses a plasma display panel (**paragraph 1**) comprising a first plate (**first insulating substrate ref. 101; glass substrate ref. 1**) and a second plate (**second insulating substrate ref. 102**) that face each other with a space (**discharge gas space ref. 105**) therebetween, the first plate having first electrodes containing silver (**silver auxiliary electrode ref. 13b**) on a facing surface thereof, the second plate having second electrodes (**train electrode ref. 104**) on a facing surface thereof, the space being filled with a gas medium (**discharge gas space ref. 105**);

Wherein the facing surface of the first plate has been processed so that a concentration of metal ions in a vicinity of the facing surface of the first plate is 1000ppm or less (**paragraph 9, 31 and Drawing 4**), the metal ions possessing reducing action on Ag ions.

Regarding claim 21, Izumo discloses the plasma display panel of claim 19, wherein the first plate, or both the first plate and the second plate are glass plates (**soda glass plates ref. 101 and 102**).

Regarding claim 43, Izumo discloses a manufacturing method for a plasma display panel comprising:

An etching step (**hydrofluoric acid solution ref. 53; drawing 2 a-c; paragraph 32**) for etching a surface of a first plate to remove metal ions present therein, the metal ions possessing reducing action on Ag ions (**paragraph 9, 31 and Drawing 4**);

An electrode arrangement step for arranging first electrodes that contain silver on the surface of the first plate (**auxiliary electrode ref. 13b**); and

A placement step for

(a) placing the first plate and a second plate on whose surface second electrodes (**train electrode ref. 104**) are arranged, with a space therebetween (**discharge gas space ref. 105**), so that the first electrodes and the second electrodes face each other (**first insulating substrate ref. 101; glass substrate ref. 1**), and

(b) enclosing a gas medium in the space between the first plate and the second plate (**discharge gas space ref. 105**).

Regarding claim 46, Izumo discloses a manufacturing method for a substrate for use in a plasma display panel comprising

An etching step for etching (**hydrofluoric acid solution ref. 53**) a surface of a glass plate (**glass substrate ref. 51**) to remove metal ions present therein, the metal ions possessing reducing action on Ag ions (**paragraph 35 and 36**).

Regarding claim 47, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 46,

Wherein in the etching step, the glass plate is etched so that an etching depth from the surface of the glass plate is at least 5 μ m but not more than 20 μ m (**paragraph 17, 19 and 31 at least 10 μ m**).

Regarding claim 48, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 46,

Wherein in the etching step, the glass plate is etched by impregnating the surface of the glass plate with a liquid containing fluorine (**paragraphs 33-35**).

Regarding claim 49, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 46,

Wherein in the etching step, the glass plate is etched so that a concentration of metal ions that exist in a vicinity of a surface of the etched substrate is 1000ppm or less, the metal ions possessing reducing action on Ag ions (**paragraph 31 and Drawing 4**).

Regarding claim 50, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 46,

Wherein in the etching step, the glass plate is etched so that a total concentration of tin with less than four valence electrons (**paragraph 34**), manganese with less than four valence electrons, iron with less than two valence electrons, indium with less than two valence electrons that exist in a vicinity of a surface of the etched substrate is 1000 ppm or less (**paragraph 9, 31 and Drawing 4**).

Regarding claim 51, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 46,

Wherein the etching step is followed by a polishing step (**paragraph 41 and 42; polishing board ref. 61**) for polishing the surface of the etched substrate.

Regarding claim 82, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 47, wherein in the etching step, the glass plate is etched by impregnating the surface of the glass plate with a liquid containing fluorine (**paragraphs 33-35**).

Regarding claim 83, Izumo discloses the manufacturing method for a substrate for use in a plasma display of claim 47, wherein in the etching step, the glass plate is etched so that a concentration of metal ions that exist in a vicinity of a surface of the etched substrate is 1000ppm or less, the metal ions possessing reducing action on Ag ions **(paragraph 31 and Drawing 4)**.

Regarding claim 84, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 48,

wherein in the etching step, the glass plate is etched so that a concentration of metal ions that exist in a vicinity of a surface of the etched substrate is 1000ppm or less, the metal ions possessing reducing action on Ag ions **(paragraph 31 and Drawing 4)**.

Regarding claim 85, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 47,

wherein in the etching step, the glass plate is etched so that a total concentration of tin with less than four valence electrons **(paragraph 34)**, manganese with less than four valence electrons, iron with less than two valence electrons, indium with less than two valence electrons that exist in a vicinity of a surface of the etched substrate is 1000 ppm or less **(paragraph 9, 31 and Drawing 4)**.

Regarding claim 86, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 48,

Wherein in the etching step, the glass plate is etched so that a total concentration of tin with less than four valence electrons **(paragraph 34)**, manganese with less than four valence electrons, iron with less than two valence electrons, indium with less than

two valence electrons that exist in a vicinity of a surface of the etched substrate is 1000 ppm or less (**paragraph 9, 31 and Drawing 4**).

Regarding claim 87, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 47,

Wherein the etching step is followed by a polishing step (**paragraph 41 and 42; polishing board ref. 61**) for polishing the surface of the etched substrate.

Regarding claim 88, Izumo discloses the manufacturing method for a substrate for use in a plasma display panel of claim 48,

Wherein the etching step is followed by a polishing step (**paragraph 41 and 42; polishing board ref. 61**) for polishing the surface of the etched substrate.

Claims 44 and 52-54 are rejected under 35 U.S.C. 102(a) as being anticipated by Nakajima et al. Japanese Patent Publication 11-11975.

Regarding claim 44, Nakajima et al. teaches a manufacturing method for a plasma display panel comprising a deactivating step for subjecting a first plate on a deactivating process (**paragraph 17**) that deactivates reducing action (**paragraph 17 reduction zone**) of metal ions on Ag ions an electrode arrangement step for arranging first electrodes that contain silver on a surface of the first plate (**paragraph 17**); and a placement step for (a) placing the first plate and a second plate (**paragraph 3**) whose surface second electrodes are arranged, with a space therebetween, so that the first electrodes and the second electrodes face each other (**paragraph 3**), and (b) enclosing a gas medium in the space between the first plate and the second plate (**plasma is a highly ionized gas paragraph 3**).

Regarding claim 52, Nakajima et al. discloses a manufacturing method for a substrate for use in a plasma display panel, comprising

A deactivating step for subjecting a glass plate to a deactivation process for deactivating reducing action of metal ions on Ag ions (**paragraph 17 calcined means reduction and oxidized; reduction zone**).

Regarding claim 53, Nakajima et al. discloses the manufacturing method for a substrate for use in a plasma display panel of claim 52,

Wherein in the deactivating step, the glass plate is heated in an oxidizing gas atmosphere (**paragraph 10 and 17 calcined and reduction zone**).

Regarding claim 54, Nakajima et al. discloses the manufacturing method for a substrate for use in a plasma display panel of claim 53,

Wherein in the deactivating step, a heating temperature is 500 degrees C or higher (**paragraph 17**).

Claims 91 and 92 are rejected under 35 U.S.C. 102(a) as being anticipated by Yamazaki et al. Japanese Patent Publication 11-213893.

Regarding claim 91, Yamazaki et al. disclose a plasma display panel (**drawing 1**) comprising:

A first plate (**screen side substrate ref. 1**); and

A second plate (**tooth back side substrate ref. 2**) that faces the first plate with a space therebetween (**drawing 2 no ref. #**), the first plate having first electrodes (**bus electrode ref. 4**) containing silver (**paragraph 6 and 17; bus electrode which consists of conductive baking object**) on a facing surface thereof, the second plate

having second electrodes (**address electrode ref. 8**) on a facing surface thereof, the space being filled with a gas medium (**paragraph 3**);

Wherein the facing surface of the first plate is glass that has been processed with additives (**paragraph 26 and 65**) so that the additives offset any shifting of color (**paragraph 67**) of the facing surface resulting from diffusion of silver into the first plate.

Regarding claim 92, Yamazaki et al. disclose a plasma display panel of claim 91 wherein metal ions of 1000 ppm or less are added to the glass (**paragraph 6**). No metal ions are added to the glass. The conductive baking object deals with the bus electrode.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Izumo Japanese Patent Publication 11246238 in view of Kanazawa U.S. Patent 5,835,072.

Regarding claim 77, Izumo teaches all the limitations of claim 77, but fails to teach a driving circuit that drives the plasma display panel. Kanazawa in the analogous art teaches a driving circuit that drives the plasma display panel (**col. 5 lines 62-65; scan driver, Y common driver, X common driver and address driver Fig. 4 ref. 102,**

103, 104 and 105). Additionally, Kanazawa teaches incorporation of such a driving circuit to improve driving of the plasma display panel (**col. 5 lines 47-65**) and improve selective discharge of cells (**col. 2 lines 50-51**).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the driver circuit in plasma display panel of Izumo since such a modification would improve driving of the plasma display panel and improve selective discharge of cells as taught by Kanazawa.

Allowable Subject Matter

Claims 55, 89 and 90 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 55, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests an manufacturing method for a substrate for use in a plasma display panel including the combination of all the limitations as set forth in claim 55, and specifically wherein in the deactivating step, the glass plate is processed so that a total concentration of tin with less than four valence electrons, manganese with less than four valence electrons, iron with less than two valence electrons, and indium with less than two valence electrons that exist in a region of 5 micrometer in depth from a surface of the substrate is 1000ppm or less. could not be found elsewhere in prior art.

Regarding claim 89, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests an manufacturing method for a substrate for use in a plasma display panel including the combination of all the limitations as set forth in claim 89, and specifically wherein in the deactivating step, the glass plate is processed so that a total concentration of tin with less than four valence electrons, manganese with less than four valence electrons, iron with less than two valence electrons, and indium with less than two valence electrons that exist in a region of 5 micrometer in depth from a surface of the substrate is 1000ppm or less. could not be found elsewhere in prior art.

Regarding claim 90, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests an manufacturing method for a substrate for use in a plasma display panel including the combination of all the limitations as set forth in claim 90, and specifically wherein in the deactivating step, the glass plate is processed so that a total concentration of tin with less than four valence electrons, manganese with less than four valence electrons, iron with less than two valence electrons, and indium with less than two valence electrons that exist in a region of 5 micrometer in depth from a surface of the substrate is 1000ppm or less. could not be found elsewhere in prior art.

Conclusion

Japanese to English translations of Japanese Patent Publications can be done at the following website <http://www19.ipdl.jpo.go.jp/PA1/cgi-bin/PA1INDEX>.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (703) 308-8991. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is n/a.


Glenn Zimmerman

Joseph Williams
